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Supply chain auditors provide companies with strategic information about the practices of suppliers, yet little is known of what influences auditors' ability to identify and report dangerous, illegal, and unethical behavior at factories. Drawing on insights from the literatures on street-level bureaucracy and on regulatory and audit design, we theorize and investigate the factors that shape the practices of private supply chain auditors. We find evidence that their reporting practices are shaped by an array of social factors, including an auditor's experience, gender, and professional training; ongoing relationships between auditors and audited factories; and gender diversity on audit teams. By providing the first comprehensive and systematic findings on supply chain auditing practices, our study suggests strategies for designing more credible monitoring regimes.

Keywords: industry self-regulation, auditing, codes of conduct, supply chains, corporate social responsibility, globalization

Multinational companies (MNCs) are increasingly being held accountable for the social and environmental practices in their supply chains by consumers, investors, activists, and governments. Companies that seek to market to socially conscious consumers or attract socially responsible investors must demonstrate that their products are ethically and sustainably produced. Companies seeking to insulate their valuable brands from "name and shame" campaigns (Bansal, 2005) have acceded to activists' demands that they monitor and attempt to improve practices in their supply chains (Berrone *et al.*, 2013). Companies must increasingly comply with domestic laws requiring due diligence and/or disclosure of supply chain practices

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(Zandvliet, 2011).[1]

Suppliers' social practices thus offer both opportunities and risks to their multinational buyers. The benefits of socially responsible production can be substantial. In 2008, Fair Trade certified products accounted for nearly $5 billion in worldwide sales. A growing number of institutional investors rely on environment and social governance (ESG) metrics to make investment decisions (US SIF, 2012). Conversely, multinational buyers are often held accountable by NGOs, trade associations, and the press for suppliers' poor social performance (e.g., Galland, 2010; Duhigg and Barboza, 2012; AFL-CIO, 2013). After the Rana Plaza in Bangladesh collapsed in 2013, killing 1,100 factory workers, four global retailers who sourced from suppliers in the building agreed to contribute nearly $40 million to compensate the families (Greenhouse, 2013).

To exploit these opportunities and manage these risks, many companies have adopted private voluntary standards to govern production practices in their global supply chains. These include meta-standards for environmental management (ISO 14001) and socially responsible management (ISO 28000); technical production standards promulgated by certification and labeling regimes such as the Forest Stewardship Council; and contractually imposed corporate supplier codes of conduct. To provide reliable assessment of suppliers' practices and compliance, even in regimes where governments cannot be relied upon for effective regulation, companies typically employ independent third-party auditors (Montiel, Husted, and Christmann, 2012).

Information from these audits informs the MNCs' strategic decisions about supply chain partners. Adequate adherence to standards is often a prerequisite for doing business, and high-

[1] For example, the U.S. Securities and Exchange Commission's Conflict Minerals Rule requires companies to disclose their use of minerals originating in the Democratic Republic of Congo or neighboring countries. Laws in many EU countries require companies to address in their annual reports the state of their suppliers' compliance with ILO core labor standards.

profile MNCs anxious to protect their brand reputations often require their current and potential suppliers to comply with labor standards embodied in the MNC's code of conduct (O'Rourke, 2003). When auditors fail to accurately assess supplier compliance, they undermine buyers' ability to make fully informed decisions. The results of auditor failure can even be catastrophic, as in the case of a factory fire in Bangladesh that killed many workers even though a recent social audit had indicated that working conditions had improved (Yardley, 2012). Similarly, in 2012, just weeks after social auditors certified that a factory in Pakistan met the SA8000 working conditions standard created by a respected nonprofit, a fire there killed hundreds of workers, some of whom were trapped by locked emergency exits and barred windows (Walsh and Greenhouse, 2012). For all these reasons, accurate supply chain monitoring is strategically critical for MNCs.

Despite the importance of supply chain auditors, little is known about how they do their jobs. Much of the literature on private supply chain standards brackets the question of auditor performance or implicitly assumes that auditors provide reasonably objective assessments. To the extent that scholars address auditor performance, they have typically charged that supply chain auditors are biased in favor of their paying clients (O'Rourke, 2002; Esbenshade, 2004; Heras-Saizarbitoria and Boiral, 2013). Qualitative work reveals that auditors often deny their vulnerability to conflicts of interest and socially construct a professional identity that emphasizes auditor independence (Dogui, Boiral, & Gendron, 2013). To our knowledge, however, no research has rigorously investigated what factors shape supply chain auditors' assessments.

We seek to fill that gap. Drawing on insights from the literatures on street-level bureaucracy in government monitoring regimes and on regulatory and audit design, we theorize and investigate the factors that shape how auditors perceive and record supply chain factories'

violations of private standards. We argue that auditors are not objective transmitters of supply chain conditions. The information they transmit to their corporate clients is shaped by social relationships, institutions, and identities. In particular, we explore how auditors are influenced by their ongoing relationships with the audited factories and by the auditing team's professional experience and gender composition. We thus move beyond the standard focus on financial conflicts of interest to explore other critical factors.

We test our hypotheses in the context of social auditing for compliance with labor standards contained in corporate supplier codes of conduct. This form of private supply chain regulation has been adopted by all U.S. *Fortune* 500 companies and thousands of other prominent MNCs (McBarnet, 2007). The codes are imposed through contracts that stipulate not only transactional terms, such as price, quantity, delivery, and quality, but also social, environmental, and human-rights standards for production processes. The substance of these codes is highly consistent: They usually incorporate broad international consensus standards, such as the core labor standards of the International Labour Organization; require compliance with domestic labor, environmental, and human-rights laws; and specifically forbid practices such as child labor and prison labor even if such practices are legal in the supplier's country or prohibited only by unenforced laws (McBarnet and Kurkchiyan, 2007). We exploit a novel dataset drawn from thousands of audits for code of conduct compliance in over 50 countries by one of the world's largest supply chain auditing firms.

The results of our analysis indicate the complexity of the social auditing process. We find that auditors' decisions are shaped by factors such as ongoing client relationships, professional experience, gender, and gender diversity. These findings significantly broaden the prevailing understanding of the supply chain auditing process and they suggest ways to design more

effective monitoring regimes for private standards adherence in global supply chains.

LITERATURE REVIEW

There is a substantial literature on private standards governing supply chain practices. Scholars have investigated the private standard-setting process in organizations such as ISO (Wood, 2004) and the Forest Stewardship Council (Meidinger, 2002). Many studies have examined the adoption and diffusion of private supply chain standards, including industry-specific programs and certification schemes (Hoffman, 2001; Bartley, 2007, 2010), the ISO 9001 quality management standard (Guler, Guillén, and MacPherson, 2002; Christmann and Taylor, 2006; Terlaak and King, 2006), and the ISO 14001 environmental management standard (Christmann and Taylor, 2001; Delmas, 2002; Potoski and Prakash, 2004; King, Lenox, and Terlaak, 2005; Prakash and Potoski, 2006; Boiral, 2007; Delmas and Montiel, 2008; Delmas and Toffel, 2008). While the strategy literature has long examined corporate social performance (e.g., Waddock and Graves, 1997; Chatterji, Levine, and Toffel, 2009; Surroca, Tribo, and Waddock, 2010), scholars are increasingly examining supply chain management through a strategic lens (e.g., Parmigiani, 2007; Reitzig and Wagner, 2010; Alcacer and Oxley, 2013).

There is a significant body of research on outcomes for firms that adopt supply chain standards. Several studies examine business outcomes such as competitiveness, sales, and stock performance (Delmas, 2001; Corbett, Montes-Sancho, and Kirsch, 2005; Terlaak and King, 2006; Levine and Toffel, 2010), operational outcomes such as waste and pollution (King and Lenox, 2001; Potoski and Prakash, 2005a; Yin and Schmeidler, 2009), legal compliance (Potoski and Prakash, 2005b), and working conditions (Esbenshade, 2004; Rodríguez-Garavito, 2005; Locke and Romis, 2007; Kocer and Fransen, 2009; Levine and Toffel, 2010; Locke, Rising, and Pal, 2012). The strong consensus in the regulatory outcomes literature is that private standards

are most likely to improve performance when they are enforced by independent monitors (Potoski and Prakash, 2005b; Weil, 2005; Short and Toffel, 2010).

While the supply chain standards literature generally assigns auditors a central role, little is known about how they perform their jobs. There has been psychological research on the cognitive motivations and biases of financial auditors (Tetlock, 1983; Glover, 1997; Hoffman and Patton, 1997; Asare, Trompeter, and Wright, 2000; Turner, 2001), but it is not clear that these findings apply to supply chain auditing. A few studies have used surveys to investigate the motivations, attitudes, and perceptions of supply chain auditors who monitor ISO 9001 compliance (Williamson, Rogerson, and Vella, 1996; Power and Terziovski, 2007). Williamson *et al*. (1996) queried auditors about their understanding of the purpose of quality control auditing, the most valuable types of evidence for establishing compliance, and the most important constituency the audits were serving. Power and Terziovski (2007) surveyed auditors to assess auditing style—how rigidly auditors adhered to protocols. Neither of these studies attempted to link auditors' attitudes, motivations, or styles to their job performance. Most pertinent to our investigation is a qualitative study of private social auditors who monitor factories in the Dominican Republic for labor standards compliance, which finds their work complements that of government labor inspectors because the groups face different incentives and political pressures (Amengual, 2010). Despite useful insight into possible influences on supply chain auditors, that study also highlights the need for more comprehensive and systematic analyses. Our study responds to this need and to recent calls for more empirical research into the process of supply chain auditing (Heras-Saizarbitoria and Boiral, 2013).

Although there is very little empirical research on private compliance monitors, there is a substantial literature on government compliance monitors, or regulatory inspectors. Econometric

studies have revealed substantial heterogeneity in how government inspectors apply the regulations, but have not theorized the sources or patterns of this variation (Feinstein, 1989, 1990; Macher, Mayo, and Nickerson, 2011; Lemley and Sampat, 2012). The literature on street-level bureaucracy investigates how the interests and identities of individual bureaucrats—and the social institutions in which they are embedded—affect their exercise of discretion in implementing government regulatory regimes (Lipsky, 1980/2010; Brehm and Gates, 1997; Keiser and Soss, 1998; May and Winter, 2000; Sandfort, 2000; Maynard-Moody and Musheno, 2003; Piore, 2005; Piore and Schrank, 2008; Schrank, 2009), but has typically used qualitative case studies, without trying to extend its insights to private monitors. Our study extends these literatures to supply chain auditing for compliance with private standards for the first systematic, comprehensive investigation of the complex mix of factors that influence how these private-sector monitors apply the standards they are charged with administering.

HYPOTHESES

Although the standards embodied in supplier codes of conduct are meant to constrain auditors' individual discretion, studies of public regulatory implementation have shown that rules are not self-executing but rather acquire meaning from how they are enforced (Hawkins, 1984; Black, 1997). Street-level bureaucrats implementing government regulatory regimes must decide which rules apply to the facts they observe. Accordingly, though their work might be "rule-saturated," it is not necessarily "rule-bound" (Maynard-Moody and Musheno, 2003: 10). Private-sector supply chain auditors, too, must decide how to apply the standards they are responsible for implementing. Below, we hypothesize several factors that influence these decisions.

Ongoing client relationships

Supply chain auditors who repeatedly visit a factory are likely to be subject to social

pressures and cognitive biases that will influence which violations they detect and cite. Returning auditors may develop "cozy relationships" (Moore *et al*., 2006: 24) with factory management that encourage a "benefit of the doubt" style of enforcement rather than an arms-length "policing" style (Bardach and Kagan, 1982/2002). Moore *et al*. (2006), for instance, describe how financial auditors adopt the perspectives of their long-term clients, akin to regulatory capture (Muehlenbachs, Staubli, and Cohen, 2013: 11). Our interviews with social auditors revealed similar concerns that an auditor who keeps auditing the same facility may "go native," becoming an extension of the factory's management.

Cognitive constraints also shape the number and type of violations auditors discover on consecutive visits. Bounded rationality limits the number of issues an auditor can pursue during an audit (Simon, 1947; Jones, 2001). As Chugh and Bazerman (2007: 3) have shown, "bounded awareness" causes individuals to "overfocus on some information and fail to use other easily available information." Specifically, individuals tend to focus on information that comports with the tacit knowledge they have gained through experience. Though tacit knowledge can be a useful resource for decision makers, "dependence on tacit knowledge can create bounds on their awareness" (Kumar and Chakrabarti, 2012: 940). Management research has found that "managers use already established knowledge to determine what they see, and they use what they already know to choose what to look for in their environment" (von Krogh and Slocum, 1994: 50). Huber and Power (1985: 172) observe that managers' "perceptual and cognitive limitations" lead to errors. Henderson and Clark (1990) demonstrate, for instance, that engineers approach new problems through the lens of their experience solving previous problems, restricting their ability to identify innovative solutions. We argue that auditors will be subject to similar constraints: Returning to the same factory, they are likely to focus on the same domains

they highlighted previously, whereas a completely new audit team would examine a factory with a fresh set of eyes will focus on a different set of issues, likely uncovering new violations.

> Hypothesis 1 (H1): An audit will yield fewer violations when conducted by an audit team that includes a member of the factory's previous audit team.

Auditor tenure

Scholars and activists have suggested that more experienced supply chain auditors are more effective (Esbenshade, 2004; Locke, Qin, and Brause, 2007). It is not clear, however, how experience affects the number of violations cited in a given audit. On the one hand, experience enhances the ability to identify violations, as would be expected and as has been documented in qualitative studies of government inspectors (Bardach and Kagan, 1982/2002). Our interviews with managers of social auditors also indicate that experience acquaints auditors with "tricks of the trade"—such as how to detect that a factory employs child labor even if child workers are not present during the audit—and that auditors exhibit "massive improvement" in their initial years on the job but that such marginal gains later diminish.

On the other hand, it is not clear that more experienced auditors will *cite* more violations. On the contrary, scholarship on government regulatory agencies has suggested that new inspectors tend to exhibit "a more policing, nit-picking attitude" than more seasoned inspectors (Bardach and Kagan, 2002: 129). Inexperienced inspectors "know too little about the industries and operations they are inspecting" and thus "lack the confidence to evaluate actual levels of risk" posed by particular violations, so they tend to go by the book and cite everything (Bardach and Kagan, 1982/2002: 129). Experienced inspectors may decline to cite violations lacking the requisite level of risk and culpability (Bardach and Kagan, 1982/2002; Hawkins, 1984). We therefore expect that violation counts will initially rise with auditor tenure, as auditors gain the experience to detect violations, but that this effect will be tempered as experienced auditors gain

the confidence to exercise more discretion.

> Hypothesis 2 (H2): Audits conducted by more experienced auditor teams will yield more violations but at a decreasing rate.

Professionalization

Education and training should promote both detection and citation of violations (Chen, Chang, and Lee, 2008). More professionalized auditors may also feel more obligated to cite what they find. Sociologists have long theorized that professionalization—specialized education and training in a field's skills and values—is a key constraint on individual discretion in both corporate and government bureaucracies (Scott, 1966; Larson, 1977; Abbott, 1988; Freidson, 1994). Weber (1947) argued that professionals are governed by a shared commitment to the ethics and purposes of their profession, which can motivate them to act independently of hierarchical commands; Durkheim (1893/1984) suggested that the professions help sustain community by preserving and transmitting shared values.

More recently, Lipsky (1980/2010: 201) argued that enhanced professionalism constrains the discretion of front-line workers in government bureaucracies: "[S]treet-level bureaucrats should be professionals whose relatively altruistic behavior, high standards, and self-monitoring substitute for what the society cannot dictate. Who will watch the watchmen? The watchmen will watch themselves." Scholars have also suggested that professionalism can temper the influence of economic incentives on employees of for-profit corporations. For instance, Parker (1999) argues that if the staff of a corporate internal compliance program were more professionalized, it might be better equipped to contest the company's profit-maximization imperatives in order to discourage wrongdoing. Although many have noted the gap between professionals' value-orientation in theory and their profit-orientation in practice (Thompson, 1967; Lipsky, 1980/2010; Gordon and Simon, 1992), professionalism remains one of the few mechanisms

available to create "islands of civic virtue … in a world of generalized self-seeking" (Gordon and Simon, 1992: 235). Research has demonstrated that professionalization improved the efficacy of government labor inspectors (Piore, 2005; Schrank, 2009). We therefore expect that teams whose auditors are more professionalized will record more violations.

> Hypothesis 3 (H3): Audits conducted by teams that include auditors who are more professionalized will yield more violations.

Gender

Research has suggested that, even when constrained by bureaucratic rules and roles, men and women may perform their work "somewhat differently" (Eagly and Johannesen-Schmindt, 2001: 783). Several gender-based behavioral distinctions documented in the literature can influence whether social auditors discover—and then, whether they cite—violations. Research has shown that women are more persistent at pursuing assigned tasks (Stonewater, Eveslage, and Dingerson, 1990; Spence and Buckner, 2000; Jacob, 2002), suggesting more diligent enforcement of regulations. Research has also found that women have perceptual and integrative processing advantages that may enhance their ability to detect violations. For example, women have been found to be more skilled at interpreting the emotional content of others' expressions (Thayer and Johnsen, 2000; Killgore and Cupp, 2002; Campanella *et al*., 2004) and to be "more sensitive to subtle stimulus" (Darley and Smith, 1995: 43). Research has also found that women tend to use a more comprehensive information-processing style, whereby they "attempt to assimilate all available cues" (Darley and Smith, 1995: 43). According to Gold, Hunton, and Gomaa (2009: 3):

> [W]omen tend to integrate more of the available evidential cues into their judgments, reflecting an intense level of cognitive processing. Men, on the other hand, tend to eliminate what they deem to be irrelevant cues and focus on a limited set of salient pieces of information that are relatively easy and quick to process.

Thus, women's information-gathering and processing style may better equip them to perceive

violations in a complex factory setting and to elicit information about violations from employees.

Moreover, research suggests that women are more likely to cite the violations they perceive. Women in bureaucratic organizations are more likely than men to be strict rule-followers (Portillo and DeHart-Davis, 2009; Oberfield, 2010; Portillo, 2012). A long line of sociological scholarship has argued generally that "rules are a means of asserting power for the less powerful" (Portillo, 2012: 91) and that low-status members of organizations use rules as a source of authority to compensate for their lack of personal authority (Green and Melnick, 1950; Kanter, 1977; Thompson, 1977). We are not aware of any research on women's status in supply chain auditing, but research on financial auditors and auditing firms suggests that, even as many women have entered that profession, audit firms have maintained masculine organizational cultures that tend to devalue women's contributions (Jonnergård, Stafsudd, and Elg, 2010; Mueller, Carter, and Ross-Smith, 2011; Haynes, 2012). Our interviews with social auditors suggest that, especially in societies with more rigid gender hierarchies, factory managers view male auditors as more authoritative. Empirical studies of government workers have found that women do indeed "go by the book" (Green and Melnick, 1950; Portillo and DeHart-Davis, 2009; Portillo, 2012: 90) more strictly than their male colleagues do. All this evidence suggests that gender will significantly influence whether supply chain auditors detect and cite violations.

> Hypothesis 4 (H4): Audits conducted by all-female teams will yield more violations than those conducted by all-male teams.

Gender diversity

Supply chain auditing teams are not necessarily all-male or all-female. In the organizational literature on teams, there is significant debate about the effects of diversity, including gender diversity, on team performance (Joshi and Roh, 2009; Phillips *et al*., 2012). We expect that gender diversity will enhance a supply chain auditing team's performance because of

complementary perceptual styles and interpersonal dynamics.

First, women's and men's different perceptual styles may cause them to identify different types of violation, enabling mixed-gender teams to find more. This should be particularly valuable in eliciting information from a diverse set of supply chain employees and managers. Research has demonstrated that, for a variety of reasons, "diversity in groups increases the likelihood that there will be access to different information in a group" (Phillips *et al*., 2012: 161). Our interviews with social auditors indicate that factories subjected to social audits tend to have predominantly female workers and male managers and that the female workers are more likely to communicate openly with female auditors, while, as one interviewee put it, male factory managers, "for cultural reasons, may find it difficult…to open up to women."

Second, research has shown how the interpersonal dynamics of gender diversity can improve team performance. For instance, studies find that people on socially diverse teams tend to prepare more thoroughly and to think through a broader range of issues (Loyd *et al*., 2013). Fenwick and Neal report the superior performance of gender-diverse teams at management-simulation exercises, crediting it to the "mix of male and female operating, decision-making and leadership styles" (2001: 217). Furthermore, men on mixed teams may try harder if they see they are being outperformed by women. Studies have shown that lower-performing team members often compare themselves to better performers, which tends to raise their "usual performance levels in order to match or beat the stronger performers" (Collins, 2000; Lount, Jr. and Phillips, 2007; Weber, Wittchen, and Hertel, 2009: 732). Weber, Wittchen, and Hertel (2009) demonstrate that men are particularly prone to such competitive behavior. Male auditors may therefore feel compelled to match or exceed their female teammates' citation rates.

Although some conflicting evidence suggests that gender diversity can sometimes

undermine team performance, a recent meta-study found that gender diversity is particularly likely to enhance performance in service industries, where team members interact directly with clients (Joshi and Roh, 2009). Because supply chain auditing is a service industry and auditors interact a lot with clients, we expect that gender diversity will improve team performance.

> Hypothesis 5 (H5): Audits conducted by gender-diverse teams will yield more violations than those conducted by single-gender teams.

DATA AND MEASURES

Empirical context and sample

To test our hypotheses, we obtained data for thousands of code-of-conduct audits conducted in over 60 countries between 2004 and 2009 by one of the world's largest social-auditing companies.[2] During that period, the company, which already had more than a decade's experience, employed several hundred people in many countries; they spoke over 30 languages.

The dataset contains audit results for and information about each audited factory, including its country and a unique identifier; characteristics and unique identifiers for the auditors on each audit; and the country and a unique identifier for the client on whose behalf each audit was conducted. The auditor preserved anonymity of the factories, auditors, and clients by not revealing their names. Our estimations are based on the 16,795 audits of 5,819 factories (in 66 countries) for which we had data on all the measures described below and which had been audited at least twice during the sample period (a technical requirement owing to our models being estimated with factory-level fixed effects, described below). Industry composition of our sample is reported in Table 1; the most common are garments, accessories, electronics, and toys.

[Insert Table 1 about here]

In nearly all cases, brands determined (a) which factories would be audited and (b)

[2] The company required anonymity as a condition of sharing its data with us.

whether the brand or the factory (or its agents) would pay. Our interviews indicated that this decision was not driven by the factory's managerial attitude, violation rate, or improvement rate. (Factories sometimes sought and paid for audits when they sought to become certified to a third-party standard such as SA8000. As described later, our results are robust to omitting from the estimation sample the very small proportion of audits that used third-party protocols.)

Dependent variable

We measure the extent to which factories adhere to codes of conduct as the *number of violations* in each audit, obtained from the social auditing firm's database. We include only the types of violation that, according to the social auditing firm (hereafter referred to as "the auditing firm"), apply in all industries and are interpreted by auditors in the same way in all countries; namely, violations of rules for child labor, forced or compulsory labor, working hours, occupational health and safety, minimum wage, treatment of foreign workers and subcontractors, and disciplinary practices.[3] During an audit, the auditors code a common set of dichotomous indicators (violation or no violation) in each category.[4]

Independent variables

To identify the potential for auditors' career concerns to influence their behavior, we coded *previous auditor* as 1 when at least one member of the focal audit team had participated in one of the factory's previous audits during the sample period and 0 otherwise.

We measure the experience of the auditors on each team as their years of service at the auditing firm. Using the auditor's database, we calculated *maximum tenure* as the highest

[3] We exclude other categories that, according to our auditor interviews, applied only to factories in particular industries or that were interpreted differently in different countries: the right of association, the right to organize and bargain collectively, legal client regulation, dormitory conditions, and canteen violations.

[4] The occupational health and safety category, for example, consists of seven indicators pertinent to emergency preparedness (blocked or locked aisles or exits, inadequate first-aid supplies, insufficient emergency exits, lack of emergency lighting, lack of employee emergency training, lack of an evacuation plan, and unmarked aisles), five indicators of fire safety, eight related to toilets, and eight related to the work floor.

number of years that any member of the audit team had worked at the company. (Using average tenure rather than maximum tenure yielded nearly identical results.)

We measure the professionalism of the audit team in two ways. Because one important source of professionalization is "standardized formal training in universities" (Lipsky, 1980/2010: 201), we code *graduate education* 1 when at least one member of the audit team possessed a graduate degree and 0 otherwise. We focused on graduate education because nearly all auditors in our dataset possessed a bachelor's degree.[5] We also created *auditing skills training* as the highest number of the auditing firm's training courses that any audit team member had completed. These courses teach skills such as how to interpret national labor laws and how to detect payroll manipulation that might indicate wage violations. (Using the average rather than the maximum number of training courses yielded nearly identical results.)

We measure gender composition with three dummy variables—*all-female audit team, all-male audit team,* and *mixed-gender audit team*.[6]

Control variables

Training can influence the stringency of government regulators (Macher, Mayo, and Nickerson, 2011) and might also influence an audit team's ability to detect and report violations. We thus control for two types of training. Using the auditor's database, we calculated the proportion of each team that had undergone *certification training*—training on the standards and protocols of a particular certification regime, such as SA8000—and the proportion that had undergone *brand training*—training provided by the brand on its corporate responsibility

[5] We coded graduate education as a dichotomous variable rather than a continuous measure to better reflect the near-binary distribution in our sample: 87 percent of the audit teams had no members with a master's degree, 7 percent had all members with a master's degree, and a mere 6 percent had an intermediate configuration.
[6] We use these dummies rather than a continuous measure such as proportion female because the database indicated that 97 percent of the audit teams in our sample were all-female, all-male, or evenly divided. Thus, the three dummies represent the distribution of our data.

program and procedures.

We control for auditors' age to ensure that the effects of auditor tenure can be attributed to job experience rather than to the life-cycle effects posited by human capital theory (Diamond, Jr., 1984), which predicts "an inverse U-shaped relationship between productivity and age" (Teitelbaum, 2006: 166). Because the auditing firm provided only five-year age-range categories (for example, 20–24 years old) for each auditor to keep precise ages confidential, we created a proxy for the team's average age. Specifically, we calculated the midpoint for each category and then created *average age* as the average of the oldest and youngest age-range categories on a team. (Using the oldest team member's age rather than the average yielded nearly identical results.)

We created a dummy variable to indicate whether an audit used a *third-party protocol*—such as that of the Business Social Compliance Initiative (BSCI), the Initiative Clause Sociale (ICS), the Sedex Members Ethical Trade Audit (SMETA), the International Council of Toy Industries (ICTI), or Worldwide Responsible Accredited Production (WRAP)—because such protocols might limit an auditor's discretion.

We also control for whether an audit is unannounced or pre-announced. The latter provides several weeks of notice, giving the factory time to try to remedy problems, which could result in fewer violations to find. In contrast, a factory does not know the date of an unannounced audit. We created a dummy variable, *unannounced audit*, coded 1 for an unannounced audit and 0 for a pre-announced audit.

Because research has indicated that financial conflicts of interest created by client fees undermine auditors' and inspectors' ability to police corporate misconduct (Cantor and Packer, 1994; Bazerman, Morgan, and Loewenstein, 1997; Oh, 2004; Moore *et al.*, 2006; Partnoy, 2006;

Dallas, 2011; Estlund, 2012; Manns, 2013; Pierce and Toffel, 2013), we control for which entity paid for each audit. Using the auditing firm's database, we created two dichotomous variables. *Audit paid for by factory or agent* identifies audits with the potential for financial conflict of interest. It is coded 1 for audits paid for by the audited factory, agents, vendors, or licensees, and 0 for audits paid for by the brand.[7] *Audit paid for by brand* is coded in the opposite manner.

We include dummy variables to control for the *number of auditors* on each audit (two through five, with one as the omitted category). Audit team size is a direct function of factory size and complexity in our setting, but others have shown that larger teams of government inspectors can lead to more stringent monitoring (Muehlenbachs, Staubli, and Cohen, 2013).

We created a dummy variable *re-audit* to distinguish routine audits from re-audits, which tend to focus on domains where violations were previously identified and thus yield fewer violations than routine audits. We also include a series of dummies to indicate a factory's audit sequence—its *second audit*, *third audit,* and so on through *sixth-or-higher audit* (because only 5 percent of the audits in our sample were a factory's seventh or higher audit), with a factory's first audit as the omitted category—to control for the possibility that successive audits yield fewer violations as factories address the issues exposed. (Using an *audit sequence* counter variable and its square rather than the dummies yielded nearly identical results.)

To capture domestic institutional factors that could influence a factory's compliance with codes of conduct (Toffel, Short, and Ouellet, 2013), we control for several country-level governmental, economic, and civil-society attributes. We measure the average economic

[7] We combined these categories of payer because prior research and our auditor interviews suggest that, in our empirical context, the financial incentives of factories and these intermediaries are closely aligned. In developing economies, intermediaries' role is to promote exports by domestic manufacturers by identifying new markets for their goods and services (Ellis, 2010) and by reducing transaction-cost barriers to export (Ahn, Khandelwal, and Shang-Jin, 2011). Our results are robust to an alternative specification in which we include two dummies that control for audits paid for by factories as distinct from audits paid for by agents, vendors, or licensees.

development level of a factory's country as its annual *per-capita gross domestic product (GDP)* in 2005 dollars, calculated by the U.S. Department of Agriculture's Economic Research Service (obtained from http://www.ers.usda.gov). To reduce skew, we use the log. To measure the extent to which the government of the audited factory's country fosters a regulatory environment promoting economic development, we use the annual *regulatory quality* metric, calculated by the World Bank's Worldwide Governance Indicators project (obtained from http://data.worldbank.org/data-catalog/worldwide-governance-indicators) to capture "perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development" (World Bank, 2013).

We measure the extent of *press freedom* in the audited factory's country via the annual Press Freedom Index produced by Reporters without Borders (obtained from http://en.rsf.org). This index incorporates the extent to which journalists face direct and indirect threats—including imprisonment, physical attacks, censorship, and self-censorship—and the number of journalists detained, murdered, physically attacked, or threatened. We create *press freedom* by reverse-coding the Press Freedom Index, so that a higher score represents more press freedom, and then rescaling the result to range from 0 to 1.

Summary statistics and correlations are reported in Tables 2 and 3.

[Insert Tables 2 and 3 about here]

EMPIRICAL MODEL AND RESULTS

Our empirical model includes all independent and control variables described above and three sets of fixed effects. We include fixed effects for each audited factory to control for time-invariant factory characteristics that might affect its violation rate, such as size, age, industry,

and national institutional context.[8] A series of dummies for the year in which the audit was conducted controls for overall temporal trends. We also include fixed effects for the headquarters country of the brand on whose behalf each audit was conducted. This controls for the possibility that consumers and activist groups in brand countries vary in their concern for and attentiveness to supply chain conditions, which might in turn affect how much pressure buyers exert on their auditors to audit stringently. These fixed effects also control for all other time-invariant differences between brand headquarters countries' institutional contexts.

Our identification strategy is based on the fact that the process of assigning auditors to audit teams is unrelated to our independent variables and thus is not a source of endogeneity that should bias their coefficients. Specifically, our interviews with the social-auditing firm indicated that assignments were based on (1) language skills to communicate with management and workers; (2) availability; and (3) the need for at least one team member to qualify as a senior auditor.

We estimate the model using Poisson regression with robust standard errors and report our results in Column 1 of Table 4. Negative-binomial regression with conditional fixed effects yields nearly identical results, indicating that our results are not sensitive to estimation technique.

[Insert Table 4 about here]

Results

The significant negative coefficient on *previous auditor* ($\beta = -0.04$; $p = 0.03$; IRR = 0.96) indicates that audits yield 4 percent fewer violations when a team member had participated in a prior audit at the same factory, which supports Hypothesis 1. The average marginal effect (AME)

[8] Because factory-level fixed effects in our model absorb the time-invariant portion of factory country-level variables, *per-capita gross domestic product (GDP)*, *regulatory quality*, and *press freedom* effectively control for within-country temporal variation in their effect on factory violation rates.

of -0.3 indicates that, compared to the sample average of 6.5 violations, an audit by a team with a previous auditor would yield 6.2 violations.

The audit team's maximum tenure has a significant positive coefficient ($\beta = 0.07$; $p < 0.01$) and its square term has a significant negative coefficient ($\beta = -0.004$; $p < 0.01$), implying that the number of violations cited increases as tenure increases but at a diminishing rate, which supports Hypothesis 2. This relationship is illustrated in Figure 1, which graphs average predicted violations at varying levels of the audit team's maximum experience.

[Insert Figure 1 about here]

Our results are mixed with respect to professionalization. The coefficient on *graduate education* is positive as predicted but not significant, yielding no evidence that audits conducted by audit teams with more formal education yielded significantly more violations. Audits did yield significantly more violations when conducted by more professionalized auditors as measured by *auditor training* ($\beta = 0.02$; $p < 0.01$; IRR = 1.02). This result is not driven by age or tenure because we control for these factors. The average marginal effect indicates that each additional training course (pursued by the most highly trained member of the team) is associated with an additional 0.14 violations. In other words, an audit team whose most highly trained member had taken nine training courses would, on average, cite one more violation than a team whose most highly trained member had taken two training courses. Jointly, these results yield some support for Hypothesis 3, but only when professionalization is measured by specific training rather than by broader education.

Team gender composition is also significantly associated with the number of violations reported. Audits by all-female teams yield 6 percent more than those by all-male teams (the baseline) ($\beta = 0.05$; $p < 0.01$; IRR = 1.05), which supports Hypothesis 4. The average marginal

effect indicates that audits by all-female teams yield 0.35 more violations than those by all-male teams (the baseline category).

Mixed-gender teams yield on average 7 percent more violations—or nearly half a violation more—than all-male teams (the baseline) ($\beta = 0.07$; $p < 0.01$; IRR = 1.07) and slightly more violations than all-female teams (Δ AME = 0.1), but the latter difference is not statistically distinguishable ($\chi^2 = 0.55$; $p = 0.46$). These results partially support Hypothesis 5.

The coefficients on *second inspection* through *sixth or more inspection* are negative and statistically significant. Wald tests comparing these coefficients indicate that, on average, each successive audit yields significantly fewer violations. Average marginal effects indicate that, on average, a factory's second audit yields nearly one fewer violation than its initial audit during our sample period ($\beta = -0.15$; $p < 0.01$; AME = -0.9), its third audit yields 1.3 fewer than its second audit (AME = -2.2, a statistically significant decline: Wald $\chi^2 = 114$; $p < 0.01$), and its fourth audit yields 0.6 fewer than its third audit (AME = -2.8, a statistically significant decline: Wald $\chi^2 = 20$; $p < 0.01$). This relationship is also apparent in the summary statistics depicted in Figure 2.

[Insert Figure 2 about here]

Consistent with assigning more auditors to larger factories, which are likely to generate more violations, we find that audits with more auditors yield significantly more violations. We find no evidence that the number of violations varied with the team's certification training, brand training, or average age or with a third-party protocol. Our point estimate indicates that unannounced audits yielded slightly more violations than announced audits at a given factory (AME = 0.2), but the difference was outside conventional significance levels ($p = 0.15$).

Audits paid for by factories or agents yielded 8 percent fewer violations than audits paid for by brands, the baseline category ($\beta = -0.08$; $p < 0.01$; IRR = 0. 92). The average marginal

effect indicates that, on average, audits yield 0.6 fewer violations when the factory or agent pays than when the brand pays, a drop from 6.5 to 5.9.

Audits yielded fewer violations in countries with greater *per capita GDP* (β = -0.62; p = 0.02; AME = -4.0) and in those with greater *press freedom* (β = -0.51; p = 0.02; AME = 3.3). Our point estimate indicates fewer violations at factories in countries with higher *regulatory quality*, but the relationship was not statistically significant (β = -0.18; p = 0.22).

Robustness tests

When we estimated the model using negative binomial regression instead of Poisson regression and when we used alternative measures of the audit team's experience (mean instead of maximum tenure), training (average rather than maximum number of training courses), and age (the age of the oldest member rather than the average of the oldest and youngest members' ages) and an alternative approach to controlling for the factory's audit sequence (a counter and its square instead of dummies), the results were nearly identical to our primary results.

We also estimated our primary model on various subsamples to assess the extent to which our results were driven by certain types of audit. Column 2 of Table 4 reports estimates after excluding the 210 audits performed for clients whose audit teams were always all-female, in case that pattern reflected a client policy that might bias our primary results. Column 3 reports estimates based on the 10,648 audits conducted by teams of at least two members to ensure that our results were not driven by single-auditor audits. Column 4 reports estimates of the model after excluding the 751 audits conducted according to third-party protocols, in case the influence of such protocols on the discovery or reporting of violations is not adequately controlled for with the dummy variable used in our main specification and because factories themselves might have chosen the protocol and auditor in these cases. Column 5 reports results for the subsample of

9,266 audits that excludes each factory's first inspection in our sample; some of those might have been pre-assessments of factories that clients had not yet engaged and our hypothesized relationships might operate differently in such circumstances. Our results are quite robust across these subsamples. The sign and magnitude of all hypothesized variable coefficients are very similar to our main results.

DISCUSSION

Our research theorized and tested several social factors that shape supply chain auditors' ability to identify and report violations of supplier codes of conduct. We find that auditors' decisions are shaped not only by the financial conflicts of interest that have been the focus of research to date, but also by social factors, including auditors' experience, professional training, and gender; the gender diversity of their teams; and their repeated interactions with those whom they audit. These findings contribute to several literatures and suggest strategies for designing private monitoring regimes to provide companies with more reliable strategic information.

Contributions to auditing and gatekeeping research

Although much is known about the adoption, diffusion, and outcomes of supply chain standards and codes of conduct that require auditing, the practices of the auditors themselves have largely remained a black box. We illuminate how auditing practices implemented on the ground—at the micro level—are influenced by several key auditor characteristics.

Prior literature exploring auditor bias has focused on economic incentives and conflicts of interest when those being audited are paying for the audits. Our analysis indicates that while economic incentives play a role, private-sector auditor behavior is also significantly influenced by social institutions, identities, and relationships. Our finer-grained picture suggests that audit designers should moderate potential bias and increase audit reliability by considering the

auditors' characteristics and relationships that we found significantly influencing their decisions.

Our findings should likewise inform the broader literature on private gatekeepers such as accountants and credit rating agencies, subjects of much interest since their failures to detect and reveal corporate wrongdoing led to corporate scandals and financial meltdowns in the early twenty-first century (Bratton, 2002; Partnoy, 2004). However, the gatekeeper literature, like the auditing literature, has focused almost exclusively on the influence of economic conflicts of interest (Cantor and Packer, 1994; Bazerman, Morgan, and Loewenstein, 1997; Goldberg, 1988; Schwarcz, 2002; Hill, 2004; Oh, 2004; Moore *et al*., 2006; Partnoy, 2006; Dallas, 2011; Manns, 2013). Our study suggests the need to also look at other factors to structure more effective gatekeeping regimes.

Contributions to research on public-sector monitors

By drawing on research on street-level bureaucracy in government regulatory agencies to predict the behavior of private-sector supply-chain auditors, our study initiates a needed dialogue between literatures on public- and private-sector monitoring that until now have each missed important insights offered by the other. Calls for insight into the micro-level processes of private supply-chain auditing (Heras-Saizarbitoria and Boiral, 2013) have overlooked the extensive literature on street-level policy implementation by government monitors while street-level bureaucracy research has largely ignored front-line implementation by private-sector monitors who play an increasingly important role in regulating corporate conduct. Our study extends both literatures by elaborating micro-level implementation processes in the context of private-sector auditing.

We extend economic research on government regulatory inspectors by investigating how experience affects stringency. Several studies document less stringency among more-experienced

government monitors, including patent examiners (Lemley and Sampat, 2012) and U.S. Food and Drug Administration inspectors of pharmaceutical plants (Macher, Mayo, and Nickerson, 2011). But these tell only one side, failing to document the initial gains from experience that we found. We similarly contribute to economic literature on human capital theory (Diamond, Jr., 1984) by demonstrating that the predicted "inverse U-shaped relationship between productivity and age" (Teitelbaum, 2006: 166) may be driven by experience rather than by age.

Contributions to research on transnational business regulation

Supply chain auditing has become an important component of international regulatory strategies that seek to address the social and environmental risks of business activities beyond the reach of state governments (Braithwaite and Drahos, 2000; Scott, 2012). Private labeling regimes such as the Forest Stewardship Council, the Marine Stewardship Council, and Fair Trade rely on private third-party auditors. International intergovernmental institutions such as the United Nations have encouraged supply chain auditing by requesting that TNCs conduct "due diligence" to ensure their suppliers' compliance with international human rights norms (Shamir, 2005; Ruggie, 2008; Kamatali, 2012). Many national regulators have followed suit, requiring MNCs to conduct due diligence and disclose supply chain practices. The efficacy and legitimacy of these efforts largely depends on the credibility of monitoring; our study responds to calls for more empirical research on the key actors (Büthe, 2010). While our findings of auditor heterogeneity support those who question auditor independence and objectivity (Power, 1997; Boiral and Gendron, 2011), our identification of several systematic determinants of that heterogeneity suggests how companies and policymakers can improve audit validity.

Implications for managers

Our finding that auditors tend to cite fewer violations at factories where they have

ongoing relationships empirically supports those who advocate auditor rotation to prevent capture by long-term clients (Moore *et al*., 2006; U.S. Public Company Accounting Oversight Board, 2011). That auditors returning to the same factory might consistently deemphasize some areas (and thus inadvertently overlook violations) should also encourage auditing firms and the brands that hire them to ensure rotation.[9] Our findings also highlight the importance of training for private-sector monitors. While auditors with higher educational credentials did not find significantly more violations than less educated peers, those with more audit-specific training did. Finally, our findings suggest that auditing teams can benefit from experience and from gender diversity, although managers should be aware that the benefits of the former attenuate.

Limitations and future research

Given the nature of our large quantitative study, we are unable to identify the precise mechanisms by which the factors we identify influence individual auditor decisions. We encourage future research to investigate the social processes underlying these outcomes.

Our many discussions with social auditors, including employees of the firm that provided our data and of competing firms, yielded no reason to suspect that endogeneity concerns are driving our results. These discussions indicated that audit team assignments were driven largely by language skills, industry expertise, availability, and the need for each team to have a qualified lead auditor. Our discussions also indicated that brands determine which factories are audited, which obviates the risk of a selection effect whereby better-than-average or worse-than-average factories might choose to be audited or to pay for their own audits, as in some voluntary environmental programs (King and Toffel, 2009). Even so, we cannot rule out the possibility that omitted variables are correlated with our independent variables and violation rates; we therefore

[9] A few auditing schemes have explicitly stipulated term limits for auditing companies; for example, California's Greenhouse Gas regulation requires regulated entities to change verification companies every six years.

encourage future randomized field experiments (e.g., Hainmueller, Hiscox, and Sequeira, 2011).

Our findings relating to gender and gender diversity may be influenced by the gender composition of the workforce at audited factories. Although we do not have such demographic data, available meta-data and our own interviews with social auditors suggest that women dominate the workforce in export-intensive industries such as garments, textiles, and electronics, which account for most of our sample (Jenkins, Esquivel, and Larrían, 2001; Dejardin and Owens, 2009; Kuncoro, 2011). Future research could explore how auditors' decisions are influenced by the interaction of the gender compositions of the audit team and the audited organization.

Future research can also explore how auditors' decisions are influenced by various short- and long-term organizational structures and incentives. For instance, differing compensation systems may influence the extent to which supply chain auditors' decisions are shaped by economic incentives and other factors. Field experiments might shed light on which types of technical and managerial training most improve the objectivity of auditors' decisions. More broadly, it will be important to investigate whether our findings are generalizable to different types of private gatekeeper, such as financial auditors, credit ratings agencies, and attorneys. Do they respond similarly to economic incentives, professional obligations, and social pressures? Finally, direct comparisons of the implementation practices of private-sector monitors such as social auditors and of public monitors such as government inspectors would promote better understanding of the efficacy and legitimacy of both.

CONCLUSION

Although private supply chain auditors are increasingly important to strategic corporate decisions and to public and private regulation, they have seldom attracted academic attention.

Our investigation of supply chain auditing practices at thousands of factories around the world reveals several social factors that influence auditors' decisions. More broadly, our work contributes to literatures on private supply chain monitoring, private gatekeeping, street-level bureaucracy, and transnational business regulation and highlights opportunities to improve the design and implementation of auditing regimes that rely on private-sector monitors.

REFERENCES

Abbott, A. 1988. *The System of Professions: An Essay on the Division of Expert Labor*. Chicago: University of Chicago Press.

AFL-CIO. 2013. *Responsibility Outsourced: Social Audits, Workplace Certification and Twenty Years of Failure to Protect Worker Rights.* Washington, DC: American Federation of Labor-Congress of Industrial Organizations (AFL-CIO).

Ahn, J., A. K. Khandelwal, and S. Wei. 2011. The role of intermediaries in facilitating trade. *Journal of International Economics* 84(4): 73–85.

Alcacer, J., and J. Oxley. 2013. Learning by supplying. *Strategic Management Journal* 35(2): 204–223.

Amengual, M. 2010. Complementary labor regulation: The uncoordinated combination of state and private regulators in the Dominican Republic. *World Development* 38(3): 405–414.

Asare, S. K., G. M. Trompeter, and A. M. Wright. 2000. The effect of accountability and time budgets on auditors' testing strategies. *Contemporary Accounting Research* 17(4): 539–560.

Bansal, P. 2005. Evolving sustainably: A longitudinal study on corporate sustainable development. *Strategic Management Journal* 26: 197–218.

Bardach, E., and R. A. Kagan. 1982/2002. *Going by the Book: The Problem of Regulatory Unreasonableness*. New Brunswick, NJ: Transaction.

Bartley, T. 2007. Institutional emergence in an era of globalization: The rise of transnational private regulation of labor and environmental conditions. *American Journal of Sociology* 113(2): 297–351.

Bartley, T. 2010. Transnational private regulation in practice: The limits of forest and labor standards certification in Indonesia. *Business and Politics* 12(3): Article 7.

Bazerman, M. H., K. Morgan, and G. F. Loewenstein. 1997. The impossibility of auditor independence. *MIT Sloan Management Review* 38(4): 89–94.

Berrone, P., A. Fosfuri, L. Gelabert, and L. Gomez-Maria. 2013. Necessity as the mother of "green" inventions: Institutional pressures and environmental innovations. *Strategic Management Journal* 34: 891–909.

Black, J. 1997. *Rules and Regulators*. Oxford, UK: Clarendon Press.

Boiral, O. 2007. Corporate greening through ISO 14001: A rational myth? *Organization Science* 18: 127–146.

Boiral, O., and Y. Gendron. 2011. Sustainable development and certification practices: Lessons learned and prospects. *Business Strategy and the Environment* 20: 331–347.

Braithwaite, J., and P. Drahos. 2000. *Global Business Regulation*. Cambridge, UK: Cambridge University Press.

Bratton, W. W. 2002. Enron and the dark side of shareholder value. *Tulane Law Review* 76: 1275–1361.
Brehm, J., and S. Gates. 1997. *Working, Shirking, and Sabotage*: *Bureaucratic Response to a Democratic Public*. Ann Arbor, MI: University of Michigan Press.
Büthe, T. 2010. Global private politics: A research agenda. *Business and Politics* 12(3): Article 12.
Campanella, S., M. Rossignol, S. Mejias, F. Joassin, P. Maurage, D. Debatisse, R. Bruyer, M. Commelinck, and J.-M. Guerit. 2004. Human gender differences in an emotional visual oddball task: An event-related potentials study. *Neuroscience Letters* 367(1): 14–18.
Cantor, R., and F. Packer. 1994. The credit rating industry. *Federal Reserve Bank of New York Quarterly* 19: 1–26.
Chatterji, A. K., D. I. Levine, and M. W. Toffel. 2009. How well do social ratings actually measure corporate social responsibility? *Journal of Economics & Management Strategy* 18(1): 125–169.
Chen, Y., B. Chang, and C. Lee. 2008. The association between continuing professional education and financial performance of public accounting firms. *International Journal of Human Resource Management* 19(9): 1720–1737.
Christmann, P., and G. Taylor. 2001. Globalization of the environment: Determinants of firm self-regulation in China. *Journal of International Business Studies* 32: 439–458.
Christmann, P., and G. Taylor. 2006. Firm self-regulation through international certifiable standards: Determinants of symbolic versus substantive implementation. *Journal of International Business Studies* 37: 863–883.
Chugh, D., and M. H. Bazerman. 2007. Bounded awareness: What you fail to see can hurt you. *Mind and Society* 6: 1–18.
Collins, R. L. 2000. Among the better ones: Upward assimilation in social comparison. In J. Suls and L. Wheeler (eds.), *Handbook of Social Comparison: Theory and Research:* 159–172. New York: Plenum.
Corbett, C. J., M. J. Montes-Sancho, and D. A. Kirsch. 2005. The financial impact of ISO 9000 certification in the United States: An empirical analysis. *Management Science* 51(7): 1046–1059.
Dallas, L. L. 2011. Short-termism, the financial crisis, and corporate governance. *Journal of Corporation Law* 37(2): 264–363.
Darley, W. K., and R. E. Smith. 1995. Gender differences in information processing strategies: An empirical test of the selectivity model in advertising response. *Journal of Advertising* 24(1): 41–56.
Dejardin, A. K., and J. Owens. 2009. *Asia in the Global Economic Crisis: Impacts and Responses from a Gender Perspective*. Bangkok: International Labour Organization Regional Office for Asia and the Pacific.
Delmas, M. 2001. Stakeholders and competitive advantage: The case of ISO 14001. *Production and Operations Management* 10: 343–358.
Delmas, M. 2002. The diffusion of environmental management standards in Europe and in the United States: An institutional perspective. *Policy Sciences* 35: 91–119.
Delmas, M. A., and I. Montiel. 2008. The diffusion of voluntary international management standards: Responsible care, ISO 9000 and ISO 14001 in the chemical industry. *Policy Studies Journal* 1: 65–93.
Delmas, M., and M. W. Toffel. 2008. Organizational responses to environmental demands:

Opening the black box. *Strategic Management Journal* 29(10): 1027–1055.
Diamond, A. M., Jr. 1984. An economic model of the life-cycle research productivity of scientists. *Scientometrics* 6: 189–196.
Dogui, K., O. Boiral, and Y. Gendron. 2013. ISO auditing and the construction of trust in auditor independence. *Accounting, Auditing & Accountability Journal* 26(8): 1279–1305.
Duhigg, C., and D. Barboza. 2012. The iEconomy, Part 2: A punishing system. In China, the human costs that are built into an iPad. *New York Times*, January 26: A1.
Durkheim, E. 1893/1984. *The Division of Labor in Society,* trans. W. D. Halls. New York: Free Press.
Eagly, A. H., and M. C. Johannesen-Schmindt. 2001. Leadership styles of women and men. *Journal of Social Issues* 57(4): 781–797.
Ellis, P. D. 2010. International trade intermediaries. In *Wiley International Encyclopedia of Marketing, Part 6. International Marketing.* DOI: 10.1002/9781444316568.wiem06040.
Esbenshade, J. 2004. *Monitoring Sweatshops: Workers, Consumers and the Global Apparel Industry*. Philadelphia: Temple University Press.
Estlund, C. 2012. Enforcement of private transnational labor regulation: A new frontier in the anti-sweatshop movement? In F. Cafaggi (ed.), *Enforcement of Transnational Regulation: Ensuring Compliance in a Global World:* 237–262. Cheltenham, UK: Edward Elgar.
Feinstein, J. S. 1989. The safety regulation of U.S. nuclear power plants: Violations, inspections, and abnormal occurrences. *Journal of Political Economy* 97: 115–154.
Feinstein, J. S. 1990. Detection controlled estimation. *Journal of Law and Economics* 33(1): 233–276.
Fenwick, G. D., and D. J. Neal. 2001. Effect of gender composition on group performance. *Gender, Work & Organization* 8(2): 205–224.
Freidson, E. 1994. *Professionalism Reborn: Theory, Prophecy, and Policy*. Chicago: University of Chicago Press.
Galland, A. 2010. *Toward a Safe, Just Workplace: Apparel Supply Chain Compliance Programs*. San Francisco: As You Sow.
Glover, S. M. 1997. The influence of time pressure and accountability on auditors' processing of nondiagnostic information. *Journal of Accounting Research* 35(2): 213–226.
Gold, A., J. E. Hunton, and M. I. Gomaa. 2009. The impact of client and auditor gender on auditors' judgments. *Accounting Horizons* 23(1): 1–18.
Goldberg, V. P. 1988. Accountable accountants: Is third party liability necessary? *Journal of Legal Studies* 17(2): 295–312.
Gordon, R. W., and W. H. Simon. 1992. The redemption of professionalism? In R. L. Nelson, D. M. Trubek, and R. L. Solomon (eds.), *Lawyers' Ideals, Lawyers' Practices: Transformations in the American Legal Profession:* 230–257. Ithaca, NY: Cornell University Press.
Green, A. W., and E. Melnick.1950. What has happened to the feminist movement? In A. W. Gouldner (ed.), *Studies in Leadership:* 277–302. New York: Harper and Brothers.
Greenhouse, S. 2013. $40 million in aid set for Bangladesh garment workers. *New York Times*, December 24: B1.
Guler, I., M. F. Guillén, and J. M. MacPherson. 2002. Global competition, institutions, and the diffusion of organizational practices: The international spread of ISO 9000 quality certificates. *Administrative Science Quarterly* 47: 207–232.
Hainmueller, J., M. J. Hiscox, and S. Sequeira. 2011. Consumer demand for the Fair Trade label: Evidence from a field experiment. Research Paper No. 2011–9B, MIT Political Science

Department, Cambridge, MA.
Hawkins, K. 1984. *Environment and Enforcement: Regulation and the Social Definition of Pollution*. London: Oxford University Press.
Haynes, K. 2012. Body beautiful? Gender, identity and the body in professional services firms. *Gender, Work & Organization* 19(5): 489–507.
Henderson, R. M., and K. B. Clark. 1990. Architectural innovation: The reconfiguration of existing product technologies and the failure of established firms. *Administrative Science Quarterly* 35(1): 9–30.
Heras-Saizarbitoria, I., and O. Boiral. 2013. Research agenda on management system standards. *International Journal of Management Reviews* 15: 47–65.
Hill, C. A. 2004. Regulating the rating agencies. *Washington University Law Quarterly* 82(1): 43–94.
Hoffman, A. J. 2001. *From Heresy to Dogma: An Institutional History of Corporate Environmentalism*. Stanford, CA: Stanford University Press.
Hoffman, V. B., and J. M. Patton. 1997. Accountability, the dilution effect, and conservatism in auditors' fraud judgments. *Journal of Accounting Research* 35(2): 227–237.
Huber, G. R., and D. J. Power. 1985. Retrospective reports of strategic-level managers: Guidelines for increasing their accuracy. *Strategic Management Journal* 6: 171–180.
Jacob, B. A. 2002. Where the boys aren't: Non-cognitive skills, returns to school, and the gender gap in higher education. *Economics and Education Review* 21: 589–598.
Jenkins, M., G. Esquivel, and F. Larrían. 2001. Export processing zones in Central America. In Felipe Larraín (ed.), *Economic Development in Central America, vol. I: Growth and Internationalization:* 197–150. Cambridge, MA: John F. Kennedy School of Government, Harvard University.
Jones, B. D. 2001. *Politics and the Architecture of Choice: Bounded Rationality and Governance*. Chicago: University of Chicago Press.
Jonnergård, K., A. Stafsudd, and U. Elg. 2010. Performance evaluations as gender barriers in professional organizations: A study of auditing firms. *Gender, Work & Organization* 17(6): 721–747.
Joshi, A., and H. Roh. 2009. The role of context in work team diversity research: A meta-analytic review. *Academy of Management Journal* 52(3): 599–627.
Kamatali, J.-M. 2012. The new guiding principles on human rights' contribution in ending the devising debate over human rights responsibilities of companies: Is it time for an ICJ advisory opinion? *Cardozo Journal of International and Comparative Law* 20(2): 437–463.
Kanter, R. M. 1977. *Men and Women of the Corporation*. New York: Basic Books.
Keiser, L. R., and J. Soss. 1998. With good cause: Bureaucratic discretion and the politics of child support enforcement. *American Journal of Political Science* 42(4): 1133–1156.
Killgore, W. D. S., and D. W. Cupp. 2002. Mood and sex of participant in perception of happy faces. *Perceptual and Motor Skills* 95: 279–288.
King, A., and M. Lenox. 2001. Lean and green? An empirical examination of the relationship between lean production and environmental performance. *Production and Operations Management* 10(3): 244–257.
King, A. A., and M. W. Toffel. 2009. Self-regulatory institutions for solving environmental problems: Perspectives and contributions from the management literature. In M. Delmas and O. Young (eds.), *Governance for the Environment: New Perspectives:* 98–115. New York: Cambridge University Press.
King, A., M. Lenox, and A. Terlaak. 2005. The strategic use of decentralized institutions:

Exploring certification with the ISO 14001 management standard. *Academy of Management Journal* 48(6): 1091–1106.
Kocer, G. R., and L. Fransen. 2009. Codes of conduct and the promise of a change of climate in worker organization. *European Journal of Industrial Relations* 15(3): 237–256.
Kumar, J. A., and A. Chakrabarti. 2012. Bounded awareness and tacit knowledge: Revisiting Challenger disaster. *Journal of Knowledge Management* 16(6): 934–949.
Kuncoro, M. 2011. *Recent Development of the Indonesian Apparel Industry*. Yogyakarta, Indonesia: Gadjah Mada University.
Larson, M. S. 1977. *The Rise of Professionalism: A Sociological Analysis*. Berkeley, CA: University of California Press.
Lemley, M. A., and B. Sampat. 2012. Examiner characteristics and patent office outcomes. *Review of Economics and Statistics* 94(3): 817–827.
Levine, D. I., and M. W. Toffel. 2010. Quality management and job quality: How the ISO 9001 standard for quality management systems affects employees and employers. *Management Science* 56(6): 978–996.
Lipsky, M. 1980/2010. *Street-Level Bureaucracy: Dilemmas of the Individual in Public Services*. New York: Russell Sage Foundation.
Locke, R. M., and M. Romis. 2007. Improving work conditions in a global supply chain. *MIT Sloan Management Review* 48(2): 54–62.
Locke, R. M., F. Qin, and A. Brause. 2007. Does monitoring improve labor standards? Lessons from Nike. *Industrial and Labor Relations Review* 61(1): 3–31.
Locke, R. M., B. A. Rising, and T. Pal. 2012. Complements or substitutes? Private codes, state regulation and the improvement of labor standards in global supply chains. Research paper no. 2012–2, MIT Political Science Department, Cambridge, MA.
Lount, R. B., Jr., and K. W. Phillips. 2007. Working harder with the out-group: The impact of social category diversity on motivation gains. *Organizational Behavior and Human Decision Processes* 103: 214–224.
Loyd, D. L., C. S. Wang, K. W. Phillips, and R. B. Lount, Jr. 2013. Social category diversity promotes premeeting elaboration: The role of relationship focus. *Organization Science* 24(3): 757–772.
Macher, J. T., J. W. Mayo, and J. A. Nickerson. 2011. Regulator heterogeneity and endogenous efforts to close the information asymmetry gap. *Journal of Law and Economics* 54(1): 25–54.
Manns, J. 2013. Downgrading rating agency reform. *George Washington Law Review* 81: 749–812.
May, P. J., and S. Winter. 2000. Reconsidering styles of regulatory enforcement: Patterns in Danish agro-environmental inspection. *Law and Policy* 22(2): 143–173.
Maynard-Moody, S., and M. Musheno. 2003. *Cops, Teachers, Counselors: Narratives of Street-Level Judgment*. Ann Arbor, MI: University of Michigan Press.
McBarnet, D. 2007. Corporate social responsibility beyond law, through law, for law: The new corporate accountability. In D. McBarnet, A. Voiculescu, and T. Campbell (eds.), *The New Corporate Accountability: Corporate Social Responsibility and the Law:* 9–56. Cambridge, UK: Cambridge University Press.
McBarnet, D., and M. Kurkchiyan. 2007. Corporate social responsibility through contractual control? Global supply chains and "other-regulation." In D. McBarnet, A. Voiculescu, and T. Campbell (eds.), *The New Corporate Accountability: Corporate Social Responsibility and the Law:* 59–92. Cambridge, UK: Cambridge University Press.

Meidinger, E. 2002. The new environmental law: Forest certification. *Buffalo Environmental Law Journal* 10: 213–303.
Muehlenbachs, L., S. Staubli, and M. A. Cohen. 2013. The effect of inspector group size and familiarity on enforcement and deterrence. Discussion paper 13–36, Resources or the Future, Washington, DC.
Montiel, I., B. W. Husted, and P. Christmann. 2012. Using private management standard certification to reduce information asymmetries in corrupt environments. *Strategic Management Journal* 33: 1103–1113.
Moore, D. A., P. E. Tetlock, L. Tanlu, and M. H. Bazerman. 2006. Conflicts of interest and the case of auditor independence: Moral seduction and strategic issue cycling. *Academy of Management Review* 31(1): 10–29.
Mueller, F., C. Carter, and A. Ross-Smith. 2011. Making sense of career in a Big Four accounting firm. *Current Sociology* 59(4): 551–567.
Oberfield, Z. W. 2010. Rule following and discretion at government's frontlines: Continuity and change during organization socialization. *Journal of Public Administration Research and Theory* 20(4): 735–755.
Oh, P. B. 2004. Gatekeeping. *Journal of Corporation Law* 29(4): 735–800.
O'Rourke, D. 2002. Monitoring the monitors: A critique of PricewaterhouseCooper's labor monitoring. In R. Jenkins, R. Pearson, and G. Seyfang (eds.), *Corporate Responsibility and Ethical Trade: Codes of Conduct in the Global Economy*: 196–207. London: Earthscan.
O'Rourke, D. 2003. Outsourcing regulation: Analyzing nongovernmental systems of labor standards and monitoring. *Policy Studies Journal* 31(1): 1–29.
Parker, C. 1999. Compliance professionalism and regulatory community: The Australian trade practices regime. *Journal of Law and Society* 26(2): 215–239.
Parmigiani, A. 2007. Why do firms both make and buy? An investigation of concurrent sourcing. *Strategic Management Journal* 28: 285–311.
Partnoy, F. 2004. Strict liability for gatekeepers: A reply to Professor Coffee. *Boston University Law Review* 84: 365–375.
Partnoy, F. 2006. How and why credit rating agencies are not like other gatekeepers. In Y. Fuchita and R. E. Litan (eds.), *Financial Gatekeepers: Can They Protect Investors?*: 59–99. Baltimore, MD: Brookings Institution Press.
Phillips, K. W., M. Duguid, M. Thomas-Hunt, and J. Uparna. 2012. Diversity as knowledge exchange: The roles of information processing, expertise, and status. In Q. M. Roberson (ed.), *The Oxford Handbook of Diversity and Work:* 157–178. New York: Oxford University Press.
Pierce, L., and M. W. Toffel. 2013. The role of organizational scope and governance in strengthening private monitoring. *Organization Science* 24(5): 1558–1584.
Piore, M. J. 2005. Rethinking international labor standards. In W. Milberg (ed.), *Labor and the Globalization of Production: Causes and Consequences*: 249–265. New York: Macmillan.
Piore, M. J., and A. Schrank. 2008. Toward managed flexibility: The revival of labour inspection in the Latin world. *International Labour Review* 147(1): 1–23.
Portillo, S. 2012. The paradox of rules: Rules as resources and constraints. *Administration and Society* 44(1): 87–108.
Portillo, S., and L. DeHart-Davis. 2009. Gender and organizational rule abidance. *Public Administration Review* 69: 339–347.
Potoski, M., and A. Prakash. 2004. Regulatory convergence in nongovernmental regimes: Cross-national adoption of ISO 14001 certification. *Journal of Politics* 66: 885–905.

Potoski, M., and A. Prakash. 2005a. Covenants with weak swords: ISO 14001 and facilities' environmental performance. *Journal of Policy Analysis Management* 24: 745–769.
Potoski, M., and A. Prakash. 2005b. Green clubs and voluntary governance: ISO 14001 and firms' regulatory compliance. *American Journal of Political Science* 49(2): 235–248.
Power, D., and M. Terziovski. 2007. Quality audit roles and skills: Perceptions of non-financial auditors and their clients. *Journal of Operations Management* 25(1): 126–147.
Power, M. 1997. *The Audit Society: Rituals of Verification*. Oxford, UK: Oxford University Press.
Prakash, A., and M. Potoski. 2006. Racing to the bottom? Trade, environmental governance, and ISO 14001. *American Journal of Political Science* 50(2): 350–364.
Reitzig M., and S. Wagner. 2010. The hidden costs of outsourcing: Evidence from patent data. *Strategic Management Journal* 31: 1183–1201.
Rodríguez-Garavito, C. 2005. Global governance and labor rights: Codes of conduct and anti-sweatshop struggles in global apparel factories in Mexico and Guatemala. *Politics and Society* 33(2): 203–233.
Ruggie, J. 2008. *Protect, Respect and Remedy: A Framework for Business and Human Rights. Report of the Special Representative of the Secretary-General on the Issue of Human Rights and Transnational Corporations and Other Business Enterprises*. United Nations, Human Rights Council, Geneva, Switzerland. http://www.reports-and-materials.org/Ruggie-report-7-Apr-2008.pdf.
Sandfort, J. R. 2000. Moving beyond discretion and outcomes: Examining public management from the front lines of the welfare system. *Journal of Public Administration Research and Theory* 10(4): 729–756.
Schrank, A. 2009. Professionalization and probity in a patrimonial state: Labor inspectors in the Dominican Republic. *Latin American Politics and Society* 51(2): 91–115.
Schwarcz, S. L. 2002. Private ordering of public markets: The rating agency paradox. *University of Illinois Law Review* 2002(1): 1–27.
Scott, C. 2012. Non-judicial enforcement of transnational private regulation. In F. Cafaggi (ed.), *Enforcement of Transnational Regulation: Ensuring Compliance in a Global World:* 147–164. Cheltenham, UK: Edward Elgar.
Scott, R. W. 1966. Professionals in bureaucracies—areas of conflict. In H. M. Vollmer and D. L. Mills (eds.), *Professionalization:* 265–275. Englewood Cliffs, NJ: Prentice-Hall.
Shamir, R. 2005. Corporate social responsibility: A case of hegemony and counter-hegemony. In B. de Sousa Santos and C. A. Rodríguez-Garavito (eds.), *Law and Globalization from Below:* 92–117. Cambridge, UK: Cambridge University Press.
Short, J. L., and M. W. Toffel. 2010. Making self-regulation more than merely symbolic: The critical role of the legal environment. *Administrative Science Quarterly* 55(3): 361–396.
Simon, H. A. 1947. *Administrative Behavior: A Study of Decision-Making Processes in Administrative Organizations*. New York: Free Press.
Spence, J. T., and C. E. Buckner. 2000. Instrumental and expressive traits, trait stereotypes, and sexist attitudes: What do they signify? *Psychology of Women Quarterly* 24: 44–62.
Stonewater, B. B., S. A. Eveslage, and M. R. Dingerson. 1990. Gender differences in career helping relationships. *Career Development Quarterly* 39: 72–85.
Surroca, J., J. A. Tribo, and S. Waddock. 2010. Corporate responsibility and financial performance: The role of intangible resources. *Strategic Management Journal* 31: 463–490.
Teitelbaum, J. C. 2006. Age and tenure of the justices and productivity of the Supreme Court:

Are term limits necessary? *Florida State University Law Review* 34: 161–182.
Terlaak, A., and A. A. King. 2006. The effect of certification with the ISO 9000 Quality Management Standard: A signaling approach. *Journal of Economics Behavior and Organization* 60(4): 579–602.
Tetlock, P. E. 1983. Accountability and complexity of thought. *Journal of Personality and Social Psychology* 45(1): 74–83.
Thayer, J. F., and B. H. Johnsen. 2000. Sex differences in judgment of facial affect: A multivariate analysis of recognition errors. *Scandinavian Journal of Psychology* 41(3): 243–246.
Thompson, J. D. 1967. *Organizations in Action*. New York: McGraw-Hill.
Thompson, V. A. 1977. *Modern Organization,* 2nd ed. New York: Alfred A. Knopf.
Toffel, M. W., J. L. Short, and M. Ouellet. 2013. Codes in context: How states, markets, and civil society shape adherence to global labor standards. Working paper 13–045, Harvard Business School, Boston.
Turner, C. W. 2001. Accountability demands and the auditor's evidence search strategy: The influence of reviewer preferences and the nature of the response (belief vs. action). *Journal of Accounting Research* 39(3): 683–706.
U.S. Public Company Accounting Oversight Board. 2011. *Concept Release on Auditor Independence and Audit Firm Rotation*. Release No. 2011–006 (August 16).
US SIF. 2012. *Report on Sustainable and Responsible Investing Trends in the United States: 2012*. Washington, DC: The Forum for Sustainable and Responsible Investment (US SIF).
von Krogh, G., J. Roos, and K. Slocum. 1994. An essay on corporate epistemology. *Strategic Management Journal* 15(1): 53–71.
Waddock, S. A., and S. B. Graves. 1997. The corporate social performance–financial performance link. *Strategic Management Journal* 18(4): 303–319.
Walsh, D., and S. Greenhouse. 2012. Certified safe, a factory in Karachi still quickly burned. *New York Times,* December 8: A1.
Weber, B., M. Wittchen, and G. Hertel. 2009. Gendered ways to motivation gains in groups. *Sex Roles* 60: 731–744.
Weber, M. 1947. *The Theory of Social and Economic Organization*. New York: Free Press.
Williamson, A., J. H. Rogerson, and A. D. Vella. 1996. Quality system auditors' attitudes and methods: A survey. *International Journal of Quality Reliability and Management* 13(8): 39–52.
Wood, S. 2004. The role of the International Organization for Standardization (ISO) in governing environmental conflict and corporate social responsibility in developing countries: Questions for research. In B. L. Toro (ed.), *Propriedad, Conflicto y Medio Ambiente*: 15–56. Bogotá, Colombia: Universidad del Rosario.
World Bank. 2013. Worldwide governance indicators: Frequently asked questions. http://info.worldbank.org/governance/wgi/faq.htm, accessed April 2013.
Yardley, J. 2012. Recalling fire's horror and exposing global brands' safety gap. *New York Times*, December 7: A1.
Yin, H., and P. J. Schmeidler. 2009. Why do standardized ISO 14001 environmental management systems lead to heterogeneous environmental outcomes? *Business Strategy and the Environment* 18: 469–486.
Zandvliet, R. 2011. Corporate social responsibility reporting in the European Union: Towards a more univocal framework. *Columbia Journal of European Law* (online)18: 38.

Table 1. Industry composition

Industry	Audits		Factories	
	Number	Percent	Number	Percent
Accessories	1,740	10	579	10
Building materials	260	2	84	1
Chemicals and plastics	97	1	42	1
Electronics	590	4	184	3
Food, agriculture, beverage	138	1	58	1
Footwear	356	2	122	2
Furniture	383	2	123	2
Garments	6,188	37	2,113	36
Metal products	156	1	51	1
Paper, printing, publishing	183	1	63	1
Services	50	0	19	0
Toys	463	3	150	3
Other/unknown	6,191	37	2,231	38
Total	16,795	100	5,819	100

Table 2. Summary statistics

Variable	**Mean**	**SD**	**Min**	**Max**
Number of violations	6.49	5.61	0	75
Previous auditor	0.15	0.36	0	1
Maximum tenure	5.39	2.03	1	15
Average tenure	4.86	1.85	0.5	15
Graduate education	0.13	0.34	0	1
Auditing skills training	2.25	1.74	0	12
All-male audit team	0.33	0.47	0	1
All-female audit team	0.50	0.50	0	1
Mixed-gender audit team	0.17	0.37	0	1
Certification training	0.50	0.42	0	1
Brand training	0.59	0.43	0	1
Average age	30.12	4.47	22.5	59
Maximum age	30.62	4.66	25	59
Third-party protocol	0.04	0.19	0	1
Unannounced audit	0.22	0.41	0	1
Audit paid for by factory or agent	0.56	0.50	0	1
Audit paid for by brand	0.44	0.50	0	1
Re-audit	0.36	0.48	0	1
Number of auditors	1.79	0.58	1	5
Audit sequence	2.96	2.25	1	21
Per-capita GDP (log)	7.77	0.98	5.61	10.68
Regulatory quality	-0.04	0.54	-1.64	1.99
Press freedom	0.33	0.27	0.12	1.00

Note: N =16,795 audits except N =15,812 for *audit paid for by factory or agent* and *audit paid for by brand*, N =11,337 for *average age* and *maximum age*, and N =16,676 for *press freedom*.

Table 3. Pairwise correlations

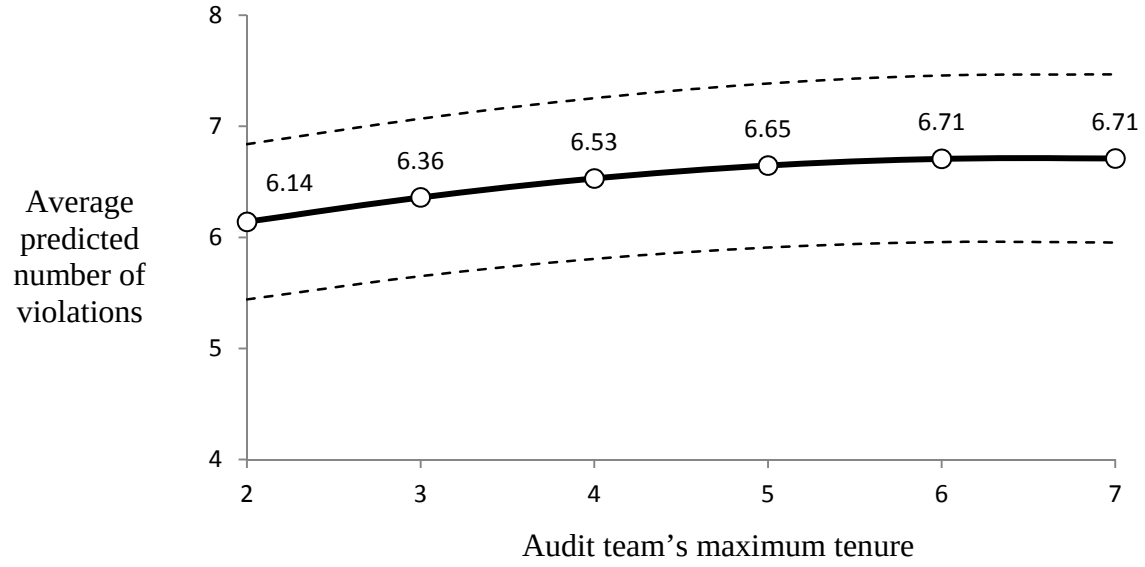
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)
(1) Number of violations	1.00																					
(2) Previous auditor	-0.13	1.00																				
(3) Maximum tenure	-0.01	0.03	1.00																			
(4) Average tenure	-0.03	0.03	0.92	1.00																		
(5) Graduate education	-0.07	0.09	-0.04	-0.04	1.00																	
(6) Auditing skills training	-0.03	0.05	-0.20	-0.30	-0.04	1.00																
(7) All-male audit team	-0.07	0.07	-0.06	-0.01	0.07	-0.07	1.00															
(8) All-female audit team	0.05	-0.09	0.03	0.07	-0.14	0.01	-0.70	1.00														
(9) Mixed-gender audit team	0.02	0.04	0.03	-0.09	0.09	0.07	-0.32	-0.45	1.00													
(10) Certification training	0.01	0.04	0.09	0.12	-0.04	0.47	0.04	0.03	-0.09	1.00												
(11) Brand training	-0.02	0.06	-0.15	-0.16	-0.09	0.59	0.02	-0.01	-0.02	0.45	1.00											
(12) Average age	-0.10	0.16	0.43	0.49	0.18	-0.17	0.22	-0.22	0.02	0.08	-0.12	1.00										
(13) Maximum age	-0.08	0.16	0.43	0.45	0.19	-0.12	0.19	-0.23	0.07	0.07	-0.12	0.97	1.00									
(14) Third-party protocol	0.12	0.01	-0.02	-0.03	0.05	0.00	0.04	-0.05	0.01	0.03	0.01	0.00	0.00	1.00								
(15) Unannounced audit	0.00	0.05	0.11	0.11	0.02	-0.01	0.02	-0.02	-0.01	-0.03	-0.04	0.06	0.05	-0.09	1.00							
(16) Audit paid for by factory or agent	0.02	-0.07	0.00	0.01	-0.09	-0.07	-0.05	0.04	0.01	0.01	-0.04	-0.03	-0.02	-0.14	-0.20	1.00						
(17) Audit paid for by brand	-0.02	0.07	0.00	-0.01	0.09	0.07	0.05	-0.04	-0.01	-0.01	0.04	0.03	0.02	0.14	0.20	-1.00	1.00					
(18) Re-audit	-0.12	0.12	-0.04	-0.05	-0.05	0.01	-0.02	0.02	-0.01	-0.02	-0.01	-0.09	-0.08	-0.02	0.07	0.05	-0.05	1.00				
(19) Number of auditors	0.13	-0.05	-0.06	-0.27	0.01	0.04	-0.23	-0.05	0.36	-0.27	-0.18	-0.29	-0.21	0.04	-0.03	0.04	-0.04	0.05	1.00			
(20) Audit sequence	-0.28	0.15	-0.14	-0.20	-0.03	0.31	-0.04	-0.01	0.06	0.09	0.20	-0.11	-0.09	-0.07	0.02	0.01	-0.01	0.12	0.02	1.00		
(21) Per-capita GDP (log)	-0.18	0.08	0.22	0.20	-0.05	0.21	-0.04	0.06	-0.03	0.09	0.14	-0.06	-0.08	-0.07	0.12	-0.16	0.16	-0.09	-0.13	0.14	1.00	
(22) Regulatory quality	-0.19	0.10	0.22	0.21	0.01	0.14	-0.02	0.04	-0.02	0.07	0.09	0.01	-0.02	-0.06	0.13	-0.18	0.18	-0.11	-0.15	0.11	0.95	1.00
(23) Press freedom	-0.27	0.22	0.22	0.25	0.34	-0.05	0.15	-0.14	0.00	-0.02	-0.02	0.46	0.42	0.00	0.12	-0.24	0.24	-0.14	-0.28	0.02	0.54	0.65

Table 4. Regression results

	(1)		(2)	(3)	(4)	(5)
	Coef.	Average marginal effects	Coef.	Coef.	Coef.	Coef.
H1 Previous auditor	-0.043*	-0.28	-0.039+	-0.028	-0.044*	-0.027
	[0.020]		[0.020]	[0.026]	[0.021]	[0.025]
H2 Maximum tenure	0.065**	0.12	0.068**	0.078**	0.069**	0.084**
	[0.014]		[0.014]	[0.016]	[0.014]	[0.017]
H2 Maximum tenure, squared	-0.004**		-0.004**	-0.004**	-0.005**	-0.005**
	[0.001]		[0.001]	[0.001]	[0.001]	[0.001]
H3 Graduate education	0.027	0.18	0.030	-0.004	0.021	0.045
	[0.024]		[0.024]	[0.029]	[0.026]	[0.039]
H3 Auditing skills training	0.021**	0.14	0.022**	0.013	0.022**	0.012
	[0.007]		[0.007]	[0.009]	[0.007]	[0.009]
H4 All-female audit team	0.054**	0.35	0.055**	0.048*	0.053**	0.052*
	[0.015]		[0.015]	[0.019]	[0.016]	[0.021]
H5 Mixed-gender audit team	0.067**	0.43	0.068**	0.049*	0.069**	0.067*
	[0.021]		[0.021]	[0.024]	[0.021]	[0.028]
Certification training	-0.021	-0.14	-0.024	-0.027	-0.031	-0.010
	[0.021]		[0.021]	[0.027]	[0.021]	[0.029]
Brand training	-0.014	-0.09	-0.012	0.008	-0.007	0.001
	[0.021]		[0.022]	[0.026]	[0.022]	[0.030]
Average age	-0.025	-0.04	-0.026	-0.015	-0.023	-0.041
	[0.019]		[0.020]	[0.028]	[0.019]	[0.027]
Average age, squared	0.000		0.000	0.000	0.000	0.001
	[0.000]		[0.000]	[0.000]	[0.000]	[0.000]
Third-party protocol	-0.080	-0.52	-0.088	-0.148*		-0.210*
	[0.058]		[0.062]	[0.070]		[0.101]
Unannounced audit	0.029	0.19	0.029	0.030	0.031	0.075**
	[0.020]		[0.020]	[0.025]	[0.020]	[0.027]
Audit paid for by factory or agent	-0.084**	-0.55	-0.083**	-0.068*	-0.064*	-0.099**
	[0.026]		[0.027]	[0.032]	[0.028]	[0.034]
Re-audit	-0.348**	-2.26	-0.351**	-0.353**	-0.358**	-0.345**
	[0.016]		[0.016]	[0.019]	[0.017]	[0.020]
Per-capita GDP (log)	-0.623*	-4.04	-0.551*	-0.749	-0.714**	-0.210
	[0.262]		[0.264]	[0.473]	[0.267]	[0.389]
Regulatory quality	-0.180	-1.17	-0.169	-0.385	-0.158	-0.621**
	[0.150]		[0.150]	[0.298]	[0.153]	[0.231]
Press freedom	-0.510*	-3.31	-0.531*	-1.059*	-0.402+	-0.879**
	[0.224]		[0.224]	[0.476]	[0.239]	[0.339]
Observations (audits)	16,795		16,585	10,648	16,044	9,266
Factories	5,819		5,748	3,810	5,523	3,082

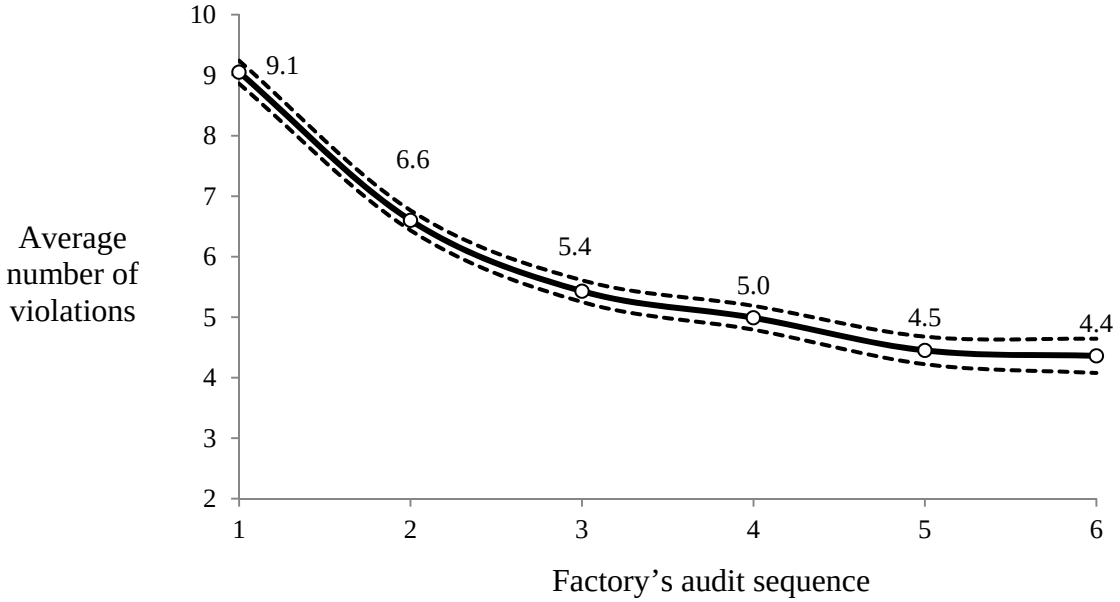
Standard errors clustered by audited factory; ** $p < 0.01$, * $p < 0.05$, + $p < 0.10$. All models also include fixed effects for the audited establishment, audit year, client country, number of auditors (2 through 5 or more), and the factory's audit sequence (2nd through 6th or more). All models include three dummy variables to indicate instances in which the following variables were missing data and thus recoded to 0: *average age* and *maximum age* (5,458 audits), *audit paid for by factory or agent* and *audit paid for by brand* (983 audits), and *press freedom* (119 audits). Model 1 is the primary model estimated on the entire sample. Model 2 excludes audits conducted for clients whose audit teams were always all-female. Model 3 includes only audits conducted by at least two auditors. Model 4 excludes audits conducted according to a third-party protocol. Model 5 excludes factories' first inspection during the sample period.

Figure 1. Effect of the audit team's maximum tenure on average predicted violations per factory



Note: The figure depicts average predicted number of violations from the fixed-effects Poisson model estimated in Column 1 of Table 4, spanning the 5th to 95th percentiles of audit tenure. Dashed lines represent the 95-percent confidence interval.

Figure 2. The average number of violations per audit declines in factories' successive audits



Note: The figure depicts sample averages, with dashed lines representing 95-percent confidence intervals calculated as the sample mean ± two times the standard error of the mean.